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Xstrata Coal [Mpumalanga Division]

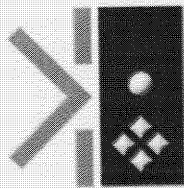
**PHASE 1: ARCHAEOLOGICAL AND HERITAGE
IMPACT ASSESSMENT STUDY FOR THE PROPOSED
EXTENSION OF COAL MINING AREA ON PORTION 1
OF GOEDVERWACHTING 80 IT FARM, MPUMALANGA
PROVINCE**

SPECIALIST STUDY REPORT

DECEMBER 2007

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REPORT DETAILS

PROJECT:	PROPOSED EXTENSION OF COAL MINING AREA ON PORTION 1 OF GOEDVERWACHTING 80 IT FARM, MPUMALANGA PROVINCE
REPORT TITLE:	PHASE 1 ARCHAEOLOGICAL AND HERITAGE IMPACT ASSESSMENT STUDY FOR THE PROPOSED EXTENSION OF COAL MINING AREA ON PORTION 1 OF GOEDVERWACHTING 80 IT FARM, MPUMALANGA PROVINCE
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PROFESSIONAL SERVICE PROVIDER (PSP)	Nzumbululo Heritage Solutions (South Africa) cc.

MANAGEMENT SUMMARY

BACKGROUND

Xstrata Coal [Mpumalanga Division] in Mpumalanga Province retained Africa Litany CC to conduct an Environmental Impact Assessment (EIA) incorporating an Environmental Management Plan (EMP) study for proposed extension of open cast coal mining activities at Tselentis mining just outside Breyten town. This report combines the Archaeological Impact Assessment (AIA) and Cultural Heritage Impact Assessment (HIA) studies that were conducted as part of scoping exercise for the Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) for proposed extension of mining activities. This heritage specialist phase 1 study focus to potential impacts on archaeological, cultural, and historical heritage resources associated the proposed mining activities' receiving environments.

SUMMARY RESULTS

The field site surveys were conducted by Nzumbululo Heritage Solutions heritage specialist (M. Murimbika [PI]). Remains of a Late Iron Age stonewalls cattle kraal were recorded on part of the project area. A Historic (architectural) farmhouse building associated with remains of other historic outbuildings, were also recorded within the target mining area. Furthermore three historic and contemporary burial grounds were identified within the project area. All these heritage resources are situated on the periphery of the proposed central mining area leaving the larger portion of the project area devoid of any physical remains of heritage materials. No archaeological physical cultural remains or materials were identified on the remaining portion of the land earmarked for the mining activities.

SUMMARY RECOMMENDATIONS

- The historic farmhouse identified on the mining area is older than 60 years and therefore protected by the National Heritage Resources Act (Act 25) of 1999.
- The LIA remains of stonewall cattle kraal should be mapped before a destructive permit is issued by SAHRA.
- All there burial grounds and individual graves located within the affected project area should be protected *in situ* as first option. Should it be impossible or impracticable to protect these burials during the proposed mining activities, the graves should be relocated to a safe ground. Burial relocation procedures and relevant permits should be acquired prior to initiating the grave relocation exercise with the consent of the affected families and communities.
- With these considerations, this study did not identify archaeological or cultural heritage barriers to the proposed mining operation. As such we recommend to the heritage authorities to approve the proposed mining activities subject to adoption and implementation of mitigation measures (where applicable) herein recommended.
- A heritage monitoring program should be applied as part on the project's EMP during the implementation phase of the mining project.

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ABBREVIATIONS

AIA	Archaeological Impact Assessment
HIA	Heritage Impact Assessment
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
HeSSA	Nzumbululo Heritage Solutions (South Africa)
EMP	Environmental Management Plan
SAHRA	South African Heritage Resources Agency

DEFINITIONS

Archaeological Material remains resulting from human activities, which are in a state of disuse and are in, or on, land and which are older than 100 years, including artefacts, human and hominid remains, and artificial features and structures.

Chance Finds Archaeological artefacts, features, structures or historical cultural remains such as human burials that are found accidentally in context previously not identified during cultural heritage scoping, screening and assessment studies. Such finds are usually found during earth moving activities such as water pipeline trench excavations.

Cultural Heritage Resources Same as Heritage Resources as defined and used in the South African Heritage Resources Act (Act No. 25 of 1999). Refer to physical cultural properties such as archaeological and palaeontological sites; historic and prehistoric places, buildings, structures and material remains; cultural sites such as places of ritual or religious importance and their associated materials; burial sites or *graves* and their associated materials; geological or natural features of cultural importance or scientific significance. Cultural Heritage Resources also include intangible resources such as religion practices, ritual ceremonies, oral histories, memories and indigenous knowledge.

Cultural Significance The complexities of what makes a place, materials or intangible resources of value to society or part of, customarily assessed in terms of aesthetic, historical, scientific/research and social values.

Grave A place of interment (variably referred to as burial), including the contents, headstone or other marker of such a place, and any other structure on or associated with such place. A grave may occur in isolation or in association with others where upon it is referred to as being situated in a cemetery.

Historic Material remains resulting from human activities, which are younger than 100 years, but no longer in use, including artefacts, human remains and artificial features and structures.

In Situ material *Material culture* and surrounding deposits in their original location and context, for example an archaeological site that has not been disturbed by farming.

Material culture Buildings, structure, features, tools and other artefacts that constitute the remains from past societies.

Site A distinct spatial cluster of artefacts, structures, organic and environmental remains, as residues of past human activity.

ARCHAEOLOGICAL AND HERITAGE IMPACT ASSESSMENT STUDY FOR THE PROPOSED EXTENSION OF COAL MINING AREA ON PORTION 1 OF GOEDVERWACHTING 80 IT FARM, MPUMALANGA PROVINCE

1 INTRODUCTION

The Archaeological Impact Assessment (AIA) incorporating the Cultural Heritage Impact Assessment (HIA) studies for the proposed extension of open cast coal mining at Tselentis Colliery were conducted in line with Section 38 of the National Heritage Resources Act (Act No 25 of 1999). The studies were conducted with the view to determine whether there is any impact or potential impact on archaeological and other heritage resources that may be situated on the areas affected by the proposed mining project on Goedverwaching 80 IT Farm outside Breyten town in Mpumalanga Province. This AIA and HIA study forms part of Environment Impact Assessment (EIA) and Environment Management Plan (EMP) program conducted by Melissa Moffett of African Litany cc.

Table 1: Terms of Reference for the AIA and HIA Study associated with the proposed Tselentis Colliery mining extension.

PURPOSE	ACTIVITIES
<ul style="list-style-type: none"> <input type="checkbox"/> To fulfil requirements of the National Heritage Resources Act, Act No. 25 of 1999, Section 38. In so doing - <input type="checkbox"/> Identify and describe (in terms of their conservation and / or preservation importance) sites of cultural and archaeological importance that may be affected by the proposed extension of mining activities. This study should include the identification of gravesites. <input type="checkbox"/> Identify and describe impacts on archaeological and cultural heritage resources associated with the proposed mining within the affected areas. 	<ul style="list-style-type: none"> <input type="checkbox"/> Identify, describe and map sites of archaeological, historical or cultural interest affected by the mining project. <input type="checkbox"/> Identify, where possible, the gravesites affected by the development. <input type="checkbox"/> Describe the importance or significance of these sites and whether these sites need to be conserved, protected or relocated. <input type="checkbox"/> Describe the procedures for mitigation or relocation of sites and provide an indication of time required for these management measures to be implemented. <input type="checkbox"/> Document findings and recommendations.

2 BRIEF BACKGROUND

The proposed extension of open cast coal mining on Goedverwachting 80 IT Farm sites covered in this study forms part of a larger mining operation at Tselentis Colliery outside Breyten Town in Mpumalanga Province (Fig 1). Generally speaking coal mining activities has seen massive expansions in recent years in Mpumalanga. This is largely fuelled by energy demands and industrial growth the country is experiencing. By nature, the proposed mining activities have the potential of affecting archaeological sites that may be on the areas earmarked for the open cast mining and associated infrastructure development.

From a culture geography and history perspective, the Breyten area falls within the Mpumalanga Escapement. This area was historically occupied by predominantly Ndebele Nguni-speaking groups before it was partitioned into commercial settler farms during the colonial period. Archaeologically, the areas associated with Nguni communities have yielded three ceramic sequences: Blackburn (AD 1050-1500) Moor Park (AD 1350-1700) and Nqabeni (AD 1700-1850) [Huffman 2007: 443].

Throughout the mid-18th century AD, the region formed part of the new Anglo-Dutch Delagoa Bay coastal trade (Huffman 2007). Prior to the Mpumalanga Escapement being incorporated into the colonial administration of the Transvaal, the region experienced several episodes of white settler migration and settler settlements as well as the associated colonial wars such as the Anglo-Boer War which ended in 1901. As part of the colonial and settler historic heritage, the region is dotted with several historic towns such as Breyten (near the project area), Hendrina and Chrissiesmeer, Middleburg, etc.

Around the 1830s, the region also witnessed the massive movements associated with the *mfencane* ('wandering hordes'). The causes and consequences of the *mfencane* are well documented elsewhere (e.g. Hamilton 1995; Cobbing 1988).

Today the project area is partitioned in commercial farms. The Afrikaner-speaking farming communities occupy most of the commercial farming areas across the district.

However, most of farmlands in the project area and its vicinity have been taken over by mining houses such as Xstrata Coal (the project proponent proposing to expand its existing mining activities in area) [Fig. 2].

Fig. 1: Locational Map of the project area, Mpumalanga Province (original Map compliments of Africa Litany CC).

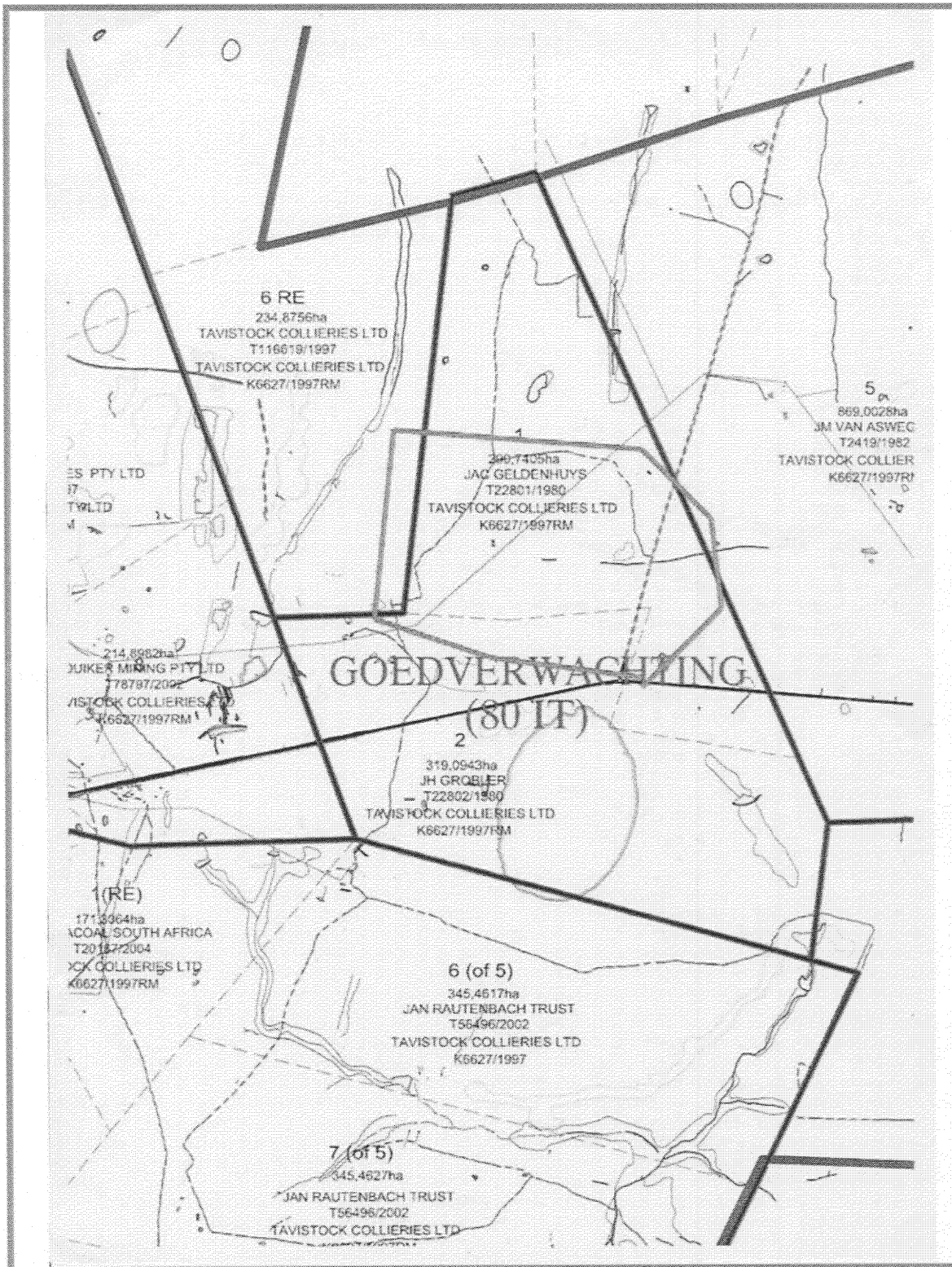
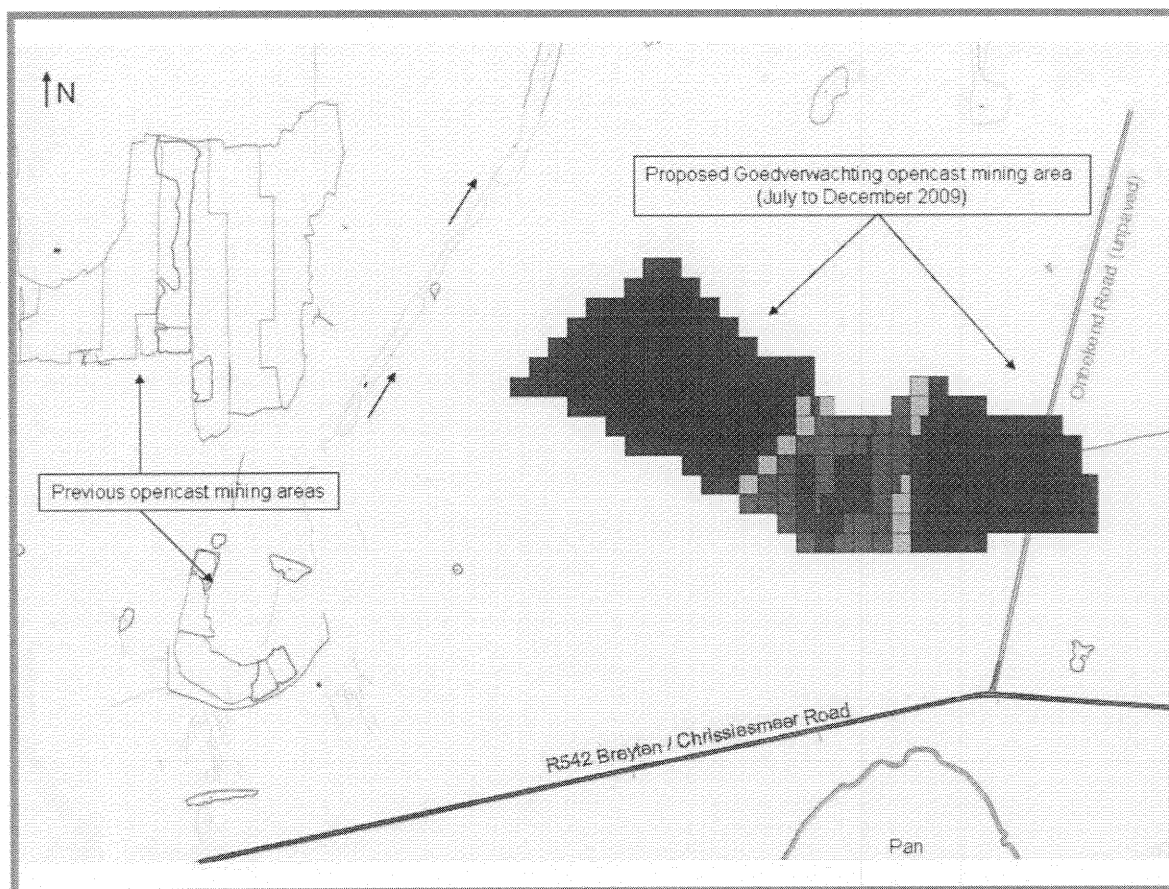


Fig 2: Farmland earmarked for open cast mining project on Goedverwaching Farm 80 IT (original Map compliments of Africa Litany CC).



3. HERITAGE LEGISLATION

Among all the laws and regulations drafted for the protection of the natural and cultural resources and the environment, the following acts have particular relevance to the management of heritage sites (cultural and historical sites) in the wherever they are found in the Republic.

- National Parks Act, No.57 of 1976.
- Environmental Conservation Act, No.73 of 1989
- Tourism Act, No.72 of 1993
- The Mineral Amendment Act, No.103 of 1993
- National Environment management Act (NEMA), No.107 of 1998
- Cultural Institutions Act, No.119 of 1998
- The National Heritage Council Act, No.11 of 1999, and regulations
- The National Heritage Resources Act, No.25 of 1999
- World Heritage Convention Act, No.49 of 1999
- Cultural Laws Amendment Bill, No.46 of 2000

In terms of Section 35 (4) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999)

...no person may, without a permit issued by the relevant heritage resources authority, destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or material or any meteorite; or bring onto, or use at an archaeological or palaeontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

Clearly, archaeological and palaeontological sites, materials, and meteorites are seen in the NHRA as "the source of our understanding of the evolution of the earth, life on earth and the history of people." In this context, the law emphasize that the management of heritage resources is integrated with environmental resources and this means that heritage resources should be assessed and, if necessary, rescued before development is allowed to take place.

In areas where there has not yet been systematic survey to identify conservation-worthy places, a permit is required to alter or demolish any historic structure older than 60 years or military installation of over 75 years old. This will apply until a survey is done and identified heritage resources are formally protected.

4 METHODS

The project environmental consultant provides us with project area and mining site maps detailing the access routes and the proposed open cast mining portions (Figs. 1 & 2). For field surveying the project soil scientist also provided us with aerial photographs of the project area. With these background data, we begin our AIA and HIA studies with desktop surveys of archaeological databases and inventories in search of available data on the heritage of the study areas. We then proceeded to conducted archaeological and cultural heritage field survey of the project area. Subsequently we conducted an assessment and produced this report.

During the site surface survey we sought to identify archaeological sites and physical cultural resources signatures as well as other cultural heritage sites such as graves or burial grounds, and historic building sites associated with the proposed mining area. Identification of archaeological sites during surveying naturally depends on visibility and accessibility. The proposed project area is easily accessible (Plate 1 & Plate 2). The area

is accessed through the R542 Breyten/Chrisssiesmeer (Fig. 1 & Fig. 2). Most of the affected project area fall on previously ploughed lands portions are laying furrow and others were ploughed recently.

5 RESULTS

Projects Location Details

Province: Mpumalanga

District: Nkangala

Nearest Town: Breyten and Hendrina

Name of Properties: Goedverwachting 80 IT Farm

Proposed development: Open cast coal mining (extension of existing mining operation in area)

1:50 000 Map Ref: 2630

GPS Co-ordinates: Table 2 & Fig. 3.

Current land use of the site: Open land characterised by, commercial agricultural land, open cast mining trenches, farm homesteads, abandoned old farming buildings, abandoned farm labourer village sites, open grazing lands and informal settlements, access roads, and fence lines (see Plate 1)

Table 2: Coordinates of points picked during field Survey

1.	S26.16.514 E30.05.952	Farm boundary point off R542 Main road south of proposed mining area
2.	S26.16.457 E30.06.150	Old Farm entrance gate to main area of proposed mining site
3.	S26.16.297 E30.06.100	Sandstone wall Historic Farm building with associated farm out buildings
4.	S26.16.281 E30.06.050	Stone wall remains of Historic 40m long building converted to cattle holding kraal in recent years
5.	S26.16.096 E30.06.001	Contemporary historic Burial Ground (Cemetery) located in woods behind informal settlement
6.	S26.16.153 E30.05.939	Collapsed stone wall of a prehistoric cattle kraal with c. 50m diameter
7.	S26.16.431 E30.06.492	Grave on Burial Ground 2 just south of R542 Tar road
8.	S26.16.442 E30.07.048	Contemporary historic Burial ground 3 located within abandoned village settlement site

Fig. 3: Coordinate map showing significant areas that yielded heritage sites on the farmland apportioned for the proposed mining project (original Map compliments of Africa Litany CC).

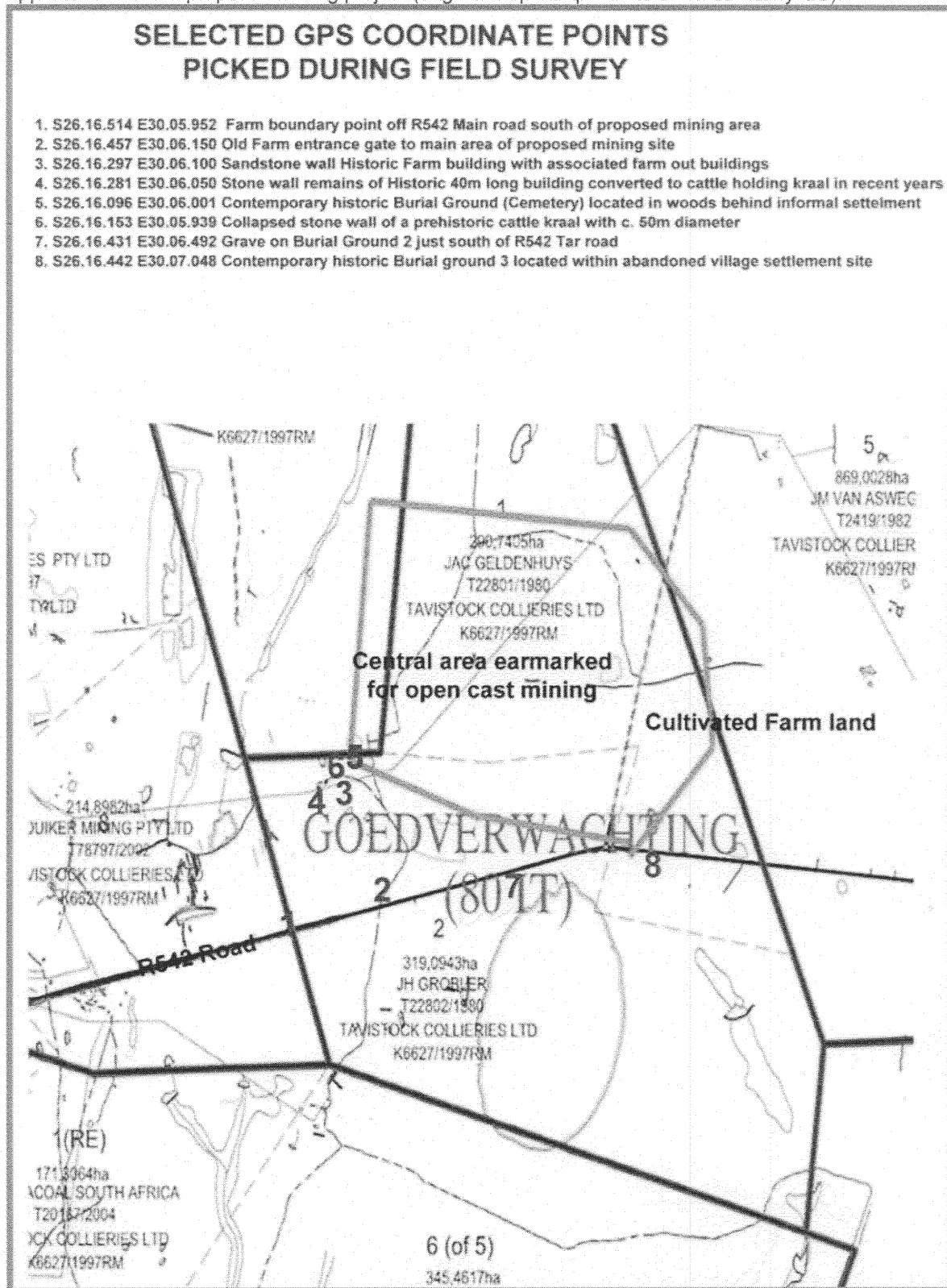


Plate 1: Aerial Photograph of the project area (Base image compliments of Red Earth CC).



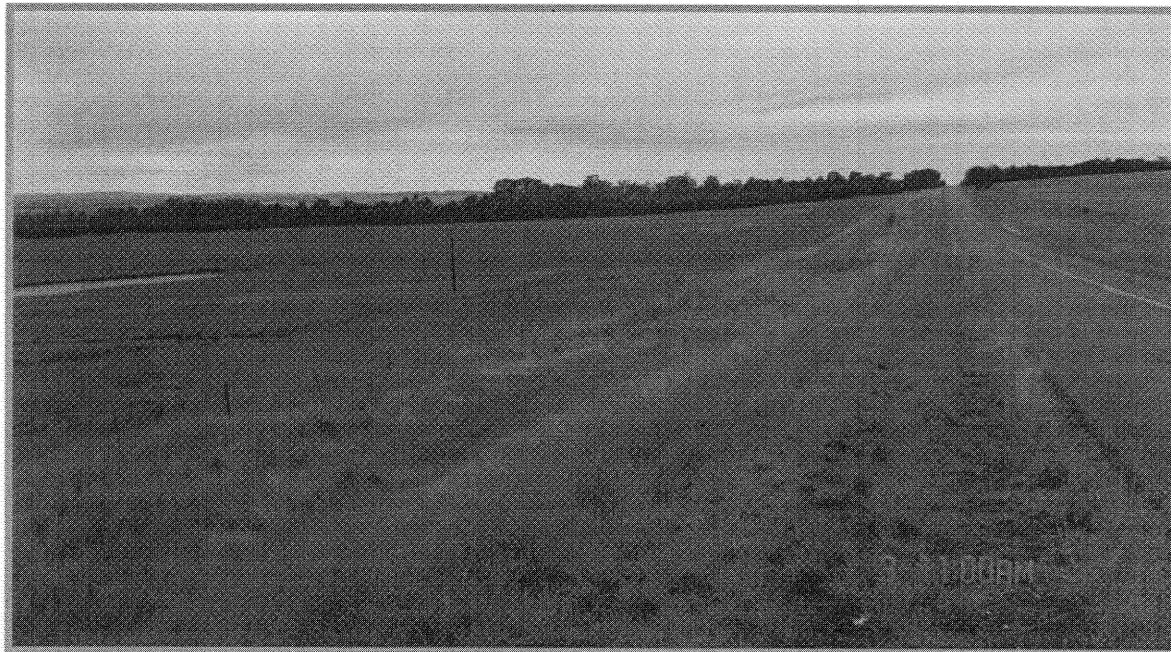


Plate 2: The project area is generally flat open farmland dotted with old excavations and open cast mines, old farm buildings, contemporary agricultural fields, windmills, and its easily accessible through several farm tracks and local roads such as the R542 in this photograph (Photo by author, 2007).

6. CATEGORISATION OF HERITAGE SITES IN PROJECT AREA

Three categories of heritage resources were identified in the project area: archaeological, historical and burial grounds.

6.1 ARCHAEOLOGICAL AND CULTURAL SITES

Archaeological remains of a 50m-diameter stonewall cattle kraal were identified on portion of the area earmarked for the mining operation (GPS coordinate S26. 16. 281 E30. 06. 050 (see Plate 3) [Figs. 3 & 4]. Generally, such site types are common in areas close to water and natural building materials where the prehistoric farming communities would settle on a more permanent basis.

The identified stonewall remains were most probably part of a larger settlement site organised in a Central Cattle Pattern attributed to the Late Iron Age in the region. Although no ceramic evidence was recovered during the survey, archaeologically, the site may be attributable to Nguni communities associated with the following three ceramic sequences: Blackburn (AD 1050-1500) Moor Park (AD 1350-1700) and Nqabeni (AD 1700-1850) [Huffman 2007: 443]. No other archaeological materials associated with the kraal remains or other categories of physical cultural heritage properties or materials were identified on the affected area for proposed project. Most of the project area has

experienced long term disturbances due to previous farming activities (see Plates 4a and 4b)



Plate 3: Remains of prehistoric cattle kraal. The kraal was about 50m in diameter. No other archaeological materials were identified in association with the stonewall remains (Photo by author, 2007).

The probability of frequency or occurrence of impacts on unidentified archaeological heritage resources in affected area is minimal and in most cases none existent given the extent of current developments and nature of previous land use activities and current disturbances on site. Most of the area earmarked for the proposed mining operation fall on cultivated lands and areas with existing burrow pits and excavations. Some portions of the land were cultivated as recently as the previous farming season.

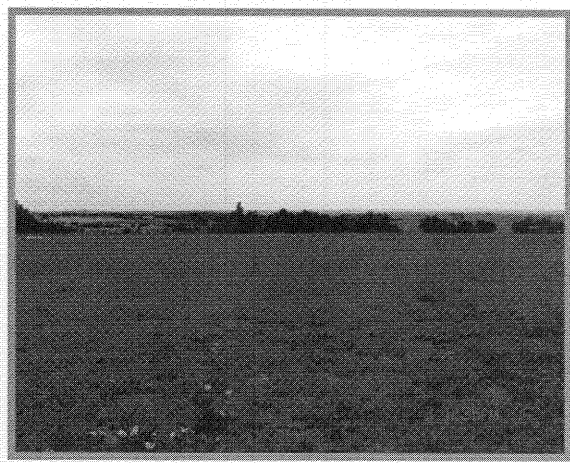
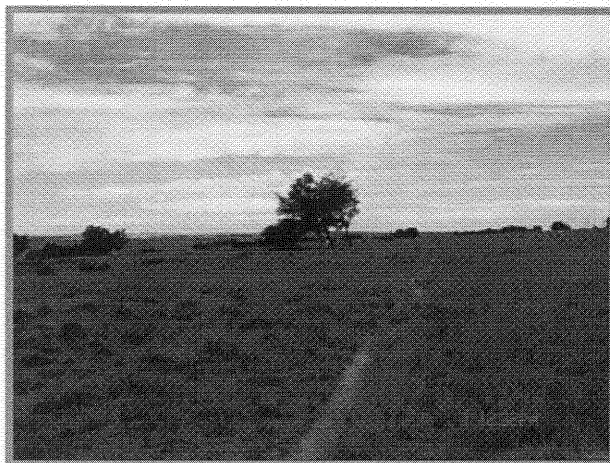


Plate 4 a & b: The affected landscape for proposed mining activities was previously used for agricultural activities, formal and informal settlements. Adjacent areas have already existing open cast mining and burrow pits (Photos by author, 2007).

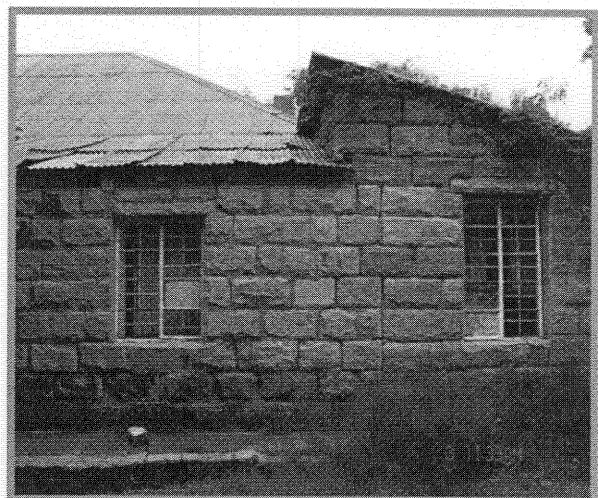
6.2 HISTORIC HERITAGE SITES

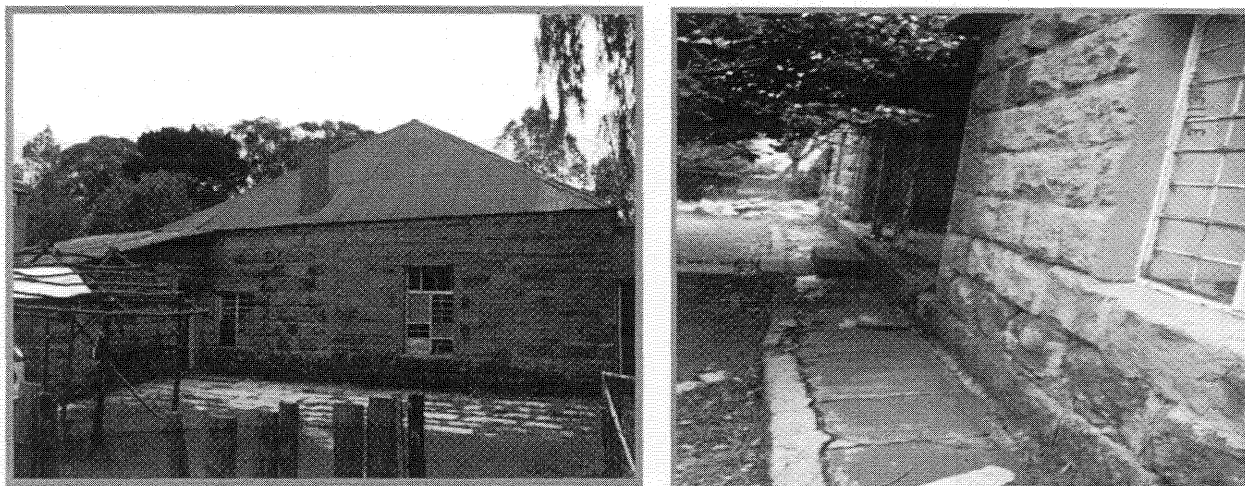
Historical and Recent sites - these sites are associated with white settlers, colonial wars, industrialization, African population settlements, contemporary ritual sites and settler farming communities are the most common and visible. The more common functions of places of cultural historical significance include:

- Domestic
- Recreation & culture
- Commerce & trade
- Agriculture & subsistence
- Social
- Health care
- Religion
- Designed landscape
- Funeral (cemeteries, graves and burial grounds)
- Civil and Structural Engineering
- Education
- Defence /Military

Farm house

An abandoned historic farm house building was recorded in project area located at GPS coordinates S26.16. 297. E30. 06. 100). The building was constructed by sandstone (found in the area) with corrugated iron sheets roof (Plates 5.1-4). The state of the inside of the building was not recorded. Although the building is abandoned, it is locked up and there is no access into the house. Based on field observation and the architectural style of the main building, the house potentially dates more than 60 years. This places it under the provisional protection under the NHRA (Act 25 of 1999).





Plates 5.1, 5.2, 5.3 & 5.4: Historic farm house constructed by sandstone with corrugated iron roof. The house is currently unoccupied (doors are locked up) and relatively in good preservation state. From the architectural style and building format, the farm house is older than 60 years of age placing it under the NHRA (Act 25 of 1999) protection (Photos by author, 2007).

Although the historic farm house is in a good state of preservation, one of its side walls has collapsed (Plates 6.1 & 6.2). The building appears to have been maintained largely in its original form with repairs or extensions done with the same building materials (Plates 5.1 – 5.4).

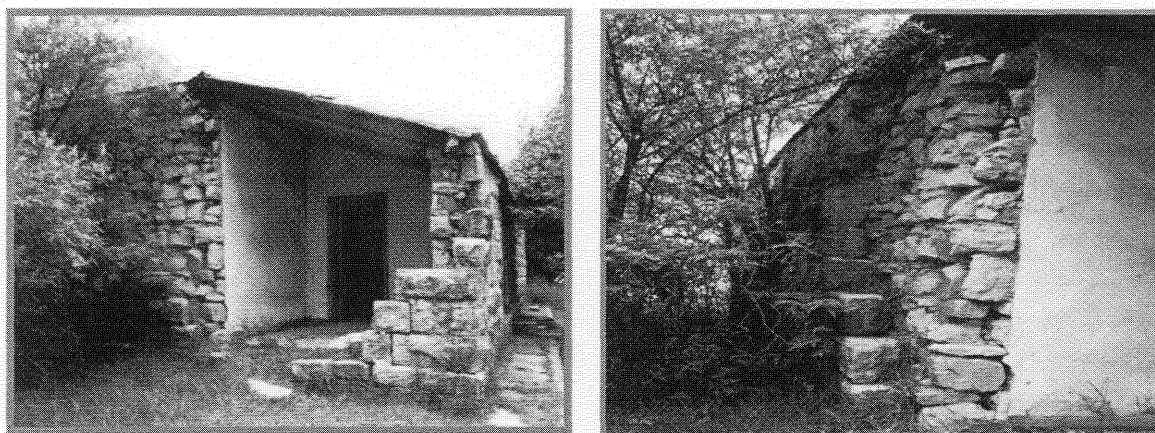


Plate 6.1 & 6.2: Portion of the side wall of the building has partially collapsed. Overall the building is in good shape considering its age and lack of maintenance (Photos by author, 2007).

The historic farm homestead is associated with farm out buildings most of which have no historic significance.

Farm outbuilding ruins

Remains of a long sandstone wall building (located at GPS coordinates S26.16.153 E30.05.939) forms part of the historic structures associated with the farm house discussed

above. Judging from its size and shape, the original building was probably used as a public building – a school, church or offices (see Plates 7.1 – 4).

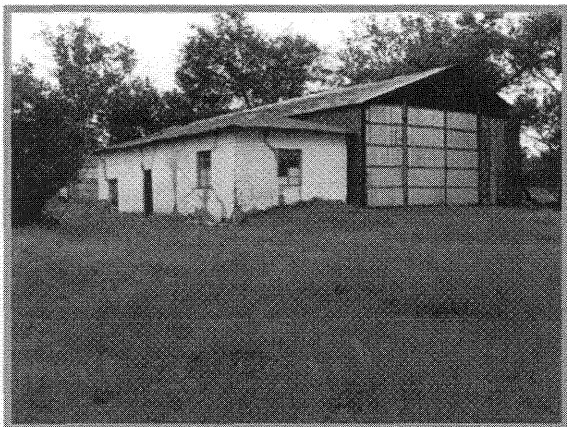


Plate 7.1: Farm outbuildings and workshops. Such buildings have no historic significance.

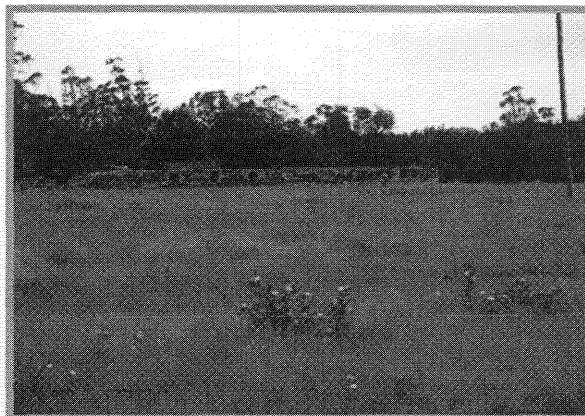
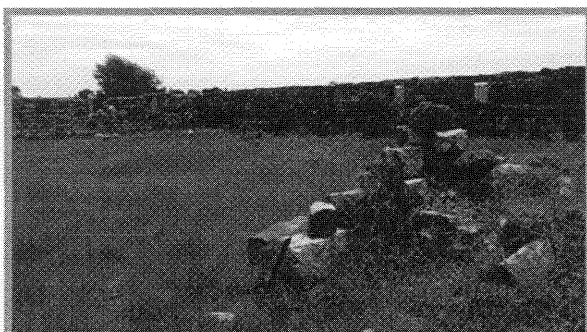


Plate 7.2: Remains of a historic stone wall building located within the farmstead. The building was most probably originally used for public function.



Plates 7.3 & 7.4: The stonewall building could be contemporary or even older than the farm house presented above, Plates 5 & 6. [Photos by author, 2007].

6.3 BURIAL GROUNDS AND GRAVES

In terms of Section 36 (3) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) no person may, without a permit issued by the relevant heritage resources authority:

- (a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- (b) destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- (c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment, which assists in the detection or recovery of metals.

Therefore, in addition to the formal protection of culturally significance graves, all graves which are older than 60 years and which are not already located in a cemetery (such as ancestral graves in rural areas), are protected. Communities, which have an interest in the graves, must be consulted before any disturbance can take place. The graves of victims of conflict and those associated with the liberation struggle will have to be included, cared for, protected and memorials erected in their honour where practical.

Historical graves form a large portion of the sites that have been identified in this project of the AENP. Regarding graves and burial grounds, the NHRA distinguishes between the following:

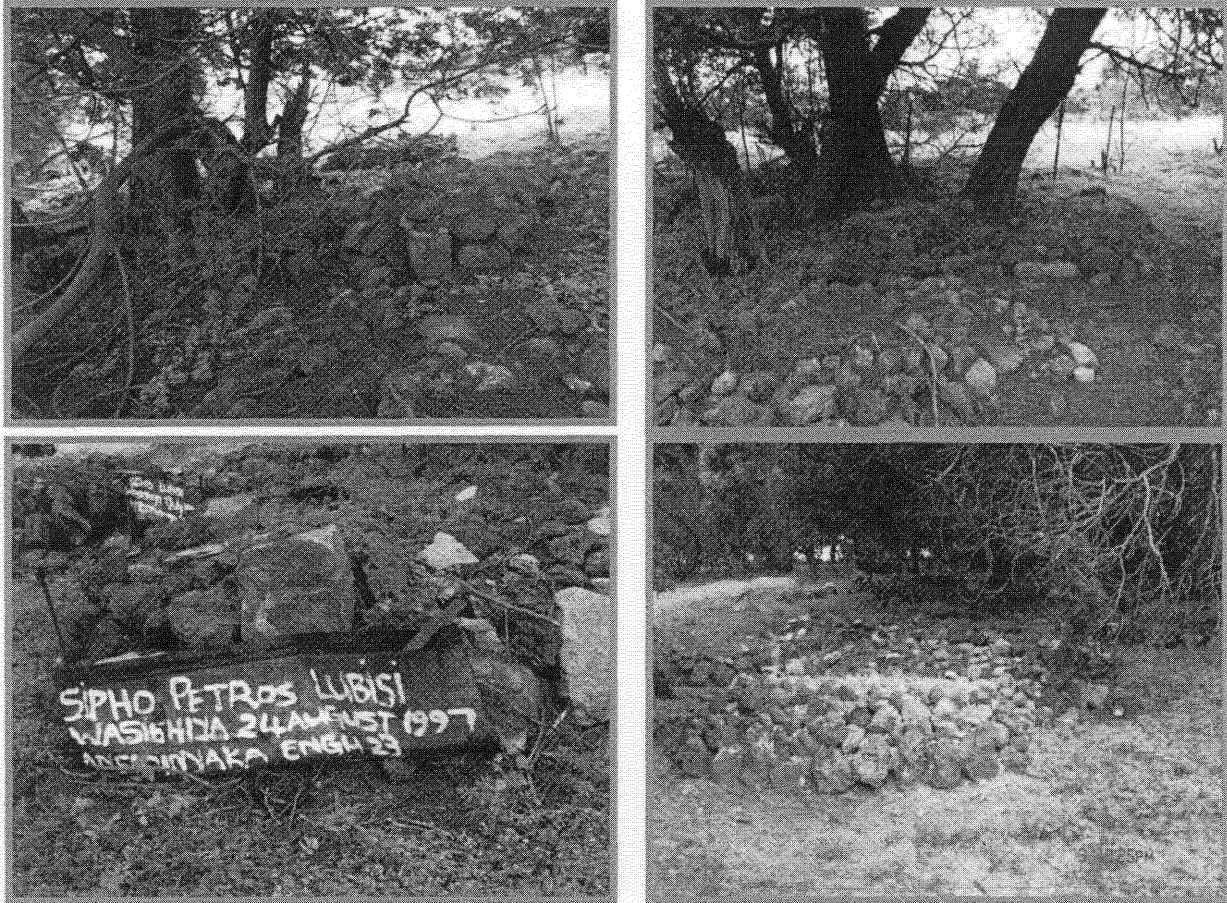
- Ancestral graves
- Royal graves and graves of traditional leaders
- Graves of victims of conflict
- Graves of individuals designated by the Minister by notice in the Gazette
- Historical graves and cemeteries

Other human remains, which are not covered in terms of the Human Tissue Act, 1983 (Act No.65 of 1983).

Three historic burial grounds were identified within the project area. Two of the sites are contemporary African cemeteries which appear to be in use at least until as recent as in the past two years. This means the burials have custodians who may easily be identified and traced. The third burial site has no sign of recent use or maintenance.

Burial Ground 1

This burial ground is contemporary and there are 39 visible graves in this cemetery located at GPS coordinates S26.16.096 E30. 06. 001. The graves are marked by oval soil mounds and stone cairns all generally oriented east-west in line with the most common African funerary practice. It is not possible at this stage to determine the age of the oldest graves in the cemetery. However, the cemetery is associated with previous farm workers. The current residents in an informal settlement nearby the cemetery claim to have some relatives buried in the cemetery.



Plates 8.1 – 8.4: Burial ground 1 has 39 visible graves under large wattle trees. There is a possibility of more graves on site which are no longer visible due to erosion and lack of maintenance. Only a few of the graves are marked with epitaphs (rudimentary) with some details of deceased. Some of the graves are as young as 2007, (Photos by author, 2007)

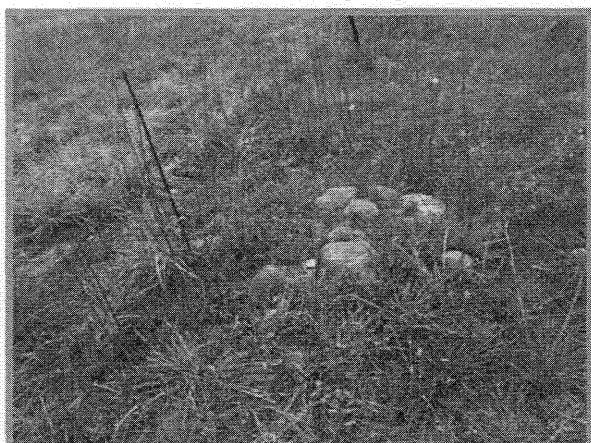
Burial ground 2

The second burial ground identified during this study is situated on the roadside about 15m off. There are 4 possible graves on site. One is clearly marked by a large stone cairn located at GPS coordinates S26.16.431 E30. 06. 492) [Plate 9].



Plate 9: Grave 1 situated next to the fence running parallel to the R542 tar road (Photo by author, 2007).

There are three more low stone cairns marking other probable graves (Plate 10) spread a few meters from the grave 1 all along the fence. This site yielded remains of brick houses and concrete foundations dug up by previous ploughing. If the graves are contemporary to the housing remains, that means the burials are historic and less that 60 years in age.



Plates 10. & 10.2: Three low stone cairns lined next to Grave 1 mark probable graves considering their shape, location and size. However, the site has been disturbed severely by previous agricultural activities and road construction works (Photos by author, 2007).

Burial Ground 3

Nine clearly marked graves are situated on a contemporary burial ground located at GPS coordinates S26.16.442 E30. 07. 048. The graves follow the traditional African format of east-west orientation for graves marked by soil mounds and stone cairns (Plates 11.1 &

11.2). They are all laid out in a linear order. Three of the graves are fenced off. All the graves are well maintained and burial ground is well tended and clear of grass. There several visible items associated with individual graves suggesting recent ancestral offering carried out on site.



Plates 11.1 & 11.2: Nine graves on this burial ground are all recent and their custodians still visit and maintain the graves and conduct ancestral offering on site (Photos by author, 2007).

This burial ground is associated with an abandoned farm workers village marked by remains of mud and brick house foundations.

7. SIGNIFICANCE OF HERITAGE RESOURCES

Cultural resources significance or other special value thereof is determined by various factors. A heritage object or place could be important in the community or be part of the pattern of South Africa's history. It may possess uncommon, rare or endangered aspects of South Africa's natural or cultural heritage, or may have the potential to yield information that will contribute to an understanding of our cultural heritage. The value of some objects or places may lie in their ability to demonstrate the principal characteristics of a particular class of South Africa's heritage resources. It may exhibit particular aesthetic characteristics valued by a certain community or cultural group or demonstrate a high degree of creative or technical achievement at a particular period. Sometimes, a resource has strong special associations with a particular community or cultural group for social, cultural or spiritual reasons, or it can be strongly associated with the life or work of a person, group or organisation of importance in the history of South Africa.

7.1 SIGNIFICANCE HISTORICAL FARMHOUSE SITE

The farm discussed in this report may provisionally be dated to pre-1900 making it historically significant retaining a middle level significant threshold. Based on

preliminary assessment made during the field study the building still exhibit important historical, cultural, historic architectural and aesthetic associations in its physical substance. This ties historic resource and its cultural context in its association:

- The historic farm house may be linked to historic events or noteworthy people;
- It may be embodiments of architectural/technical accomplishment, design, or workmanship associated with settler history in the area;
- It is a sources of information important in historical or architectural research and
- It is important in the cultural system of settler communities.

The context for these associations may be national in scale or focus on regional and local affairs.

The historic farmhouse in question may not be the most highly significant historic architectural piece in the general region, nonetheless the building retained significant integrity with many a number of relevant attributes. Its building material and the ways in which materials were put together; its aesthetic qualities and the exact geographic location of a farmhouse and the nature of its setting. Integrity of the building may be aged by weather, or chipped away by other forms of deterioration, but it is capable of being sensed – it can be recognized, described, and verified.

Integrity is not the same as condition. The condition of a resource is defined in terms of deterioration; integrity is defined in terms of correspondence with associations in the past. Condition is a matter of rot and rust; integrity is a matter of age and authenticity. All physical things have a condition; they do not all have historical integrity. On the other hand, all things with historical integrity also have a condition. The condition of a resource during its period of significance is part of its integrity. The historic farmhouse exhibit both integrity and relatively stable condition.

All the above analysis serves to confirm that the historic farmhouse has middle significant threshold making it worthy for consideration for a Phase 2 mitigation assessment should the proposed development make it impossible to preserve *in situ*.

7. 2. SIGNIFICANCE VALUATION BURIAL GROUND, HISTORIC CEMETERIES AND GRAVES

The significance of burial grounds and gravesites is closely tied to their age and historical, cultural and social context. Nonetheless, every burial should be considered as of high significance. The following procedures should be followed for all affected grave sites identified in this study.

Is the burial site or the remains identified less than 60 years old? If so, they may be subject to provisions of the Human Tissue Act, Cemeteries Ordinance(s) and to local, regional, or municipal regulations. It is most probable that all the graves identified in this

study are younger than 60 years and therefore should be treated in line with the above regulations. Should such remains be found accidentally during the proposed mining operation, the findings must be reported to the police but are not automatically protected by the National Heritage Resources Act (Act 25 of 1999).

8. STATEMENT OF OVERALL IMPACTS

Should the mining project be approved, their impact on identified archaeological, historical and burial sites will be permanent. However, should the mining planning be done in such a way to avoid the identified sites, their security *in situ*, would need to be confirmed prior to mining beginning. Should previously unidentified archaeological or any other physical cultural materials be discovered on any portion of the project area during the mining operation, the impact will be permanent in nature, extent and duration. However, based on field observations and the extent of disturbances on most of the project area, it is unlikely that archaeological materials of high significance could be found *in situ* at any stage of the proposed project. As such, no impacts were identified or measured in probabilities or intensity given the fact most of the portions of the affected areas are already disturbed or previously developed leaving little chance of locating chance archaeological materials.

9. RECOMMENDATIONS

- **Historic Building** - The identified historic farmhouse has medium significance threshold that makes it worthy of Phase 2 Historic Architectural documentation and Site Condition Survey. Based on its location, the building is slightly on the periphery of the central area earmarked for mining operations (see Fig.2 & Plate 1). This means the building may possibly be preserved *in situ* and a good candidate for adaptive re-use. Nonetheless, we recommend that a Phase 2 historic architecture study be conducted to document the building in more detail and make further specific recommendations. In line with the NHRA, should preserving the building *in situ* be ruled out, a destruction permit will be required from SAHRA before any interference with the building is approved.
- **Burial Grounds and Graves** - All identified burials are physically located on the periphery of the central area earmarked for mining operations (see Figs 1, 2 & 3 and Plate 1) and therefore it may be possible to preserve them *in situ*. As a first option, all

burials should be preserved in situ. Should this be impossible in the face of the proposed mining activities, Burial Re-location Procedures should be applied in consultation with the affected communities and families. The graves may not be interfered with prior to clearances and permits issued and approvals from the custodians.

- **Relocating Graves** - In the event that a graveyard is to be moved or developed for another purpose, it is incumbent on the developer (the mine) to publish a list of the names of all the persons buried in the graveyard or burial ground if there are gravestones or simply a notification that graves in the relevant graveyard/cemetery/burial ground within the affected landscape are to be disturbed. Such a list would have to be compiled from the names on the gravestones or from other records. The published list would call on the relatives of the deceased to react within a certain period to claim the remains for re-interment. If the relatives do not react to the advertisement, the remains may be re-interred at the planning discretion of the local authority in consultation with the local communities and heritage authority. In case of affected burials in this study, most of the deceased's relatives and custodians of the graves should be easy to trace for consultation for relocation purposes.

The re-location procedures are a matter of the law and by-laws and these should be followed in all respect. It is illegal in terms of the Human Tissue Act for individuals to keep human remains, even if they have a permit, and even if the material was found on their own land. Xstrata Coal as the proponent of the proposed mining operation is obliged to comply with this regulation for all burials or human remains that originate from the project area.

- **Previously unidentified burial sites/graves** - During the proposed mining operation, should burial sites outside the NHRA be accidentally found, they must be reported to the nearest police station to ascertain whether or not a crime has been committed. If there is no evidence for a crime having been committed, and if the person cannot be identified so that their relatives can be contacted, the remains may be kept in an institution where certain conditions are fulfilled. These conditions are laid down in the Human Tissue Act (Act No. 65 of 1983). In contexts where the local traditional authorities give their consent to the unknown remains to be re-buried in their area, such re-interment may be conducted under the same regulations as would apply for known human remains.
- **Exhumation of human remains** - The Exhumations Ordinance (Ordinance No. 12 of 1980 and as amended) is also relevant in cases where the mining operations will definitely interfere with identified graves and such interference may not be avoided as part of approved mining operations. Its purpose is "To prohibit the desecration, destruction and damaging of graves in cemeteries and receptacles containing bodies; to regulate the exhumation, disturbance,

removal and re-interment of bodies, and to provide for matters incidental thereto". This ordinance is supplemented and support by local authorities regulations, municipality by-laws and other ordinances.

- **Interfering with archaeological site** – All archaeological sites are protected by the NHRA general regulations. Therefore, the remains of the Late Iron Age stonewall cattle kraal identified in this study may not be interfered with without a permit from the SAHRA. If the mining operations are approved and the archaeological remains can not be protected *in situ*, we recommend that that the remains be preserved by record through mapping before a destructive permit is issued to approve the mining operations. The site is of medium to low significance threshold and therefore it does not warrant total protection. However, the site does offer archaeological spatial location data of research significance that is worthy of recording. Once the mapping is done, a destruction permit should be applied for and should be issued by SAHRA.
- **Further mitigation intervention** - No further pre-development archaeological or heritage study or mitigation is necessary on the main area where no archaeological or heritage sites were recorded on the project area. However, should any chance archaeological materials be discover in the course of the digging and open cast excavations, we recommend that the heritage authorities be informed in order to assess whether salvage or rescue operation will be necessary.

10. CONCLUDING REMARKS

If recommendations herein made are taken into consideration by the heritage authority, it is our perspective that the proposed mining operations are unlikely to impact upon archaeological or physical cultural heritage resources of high significance. Should it be impossible to leave the identified heritage sites *in situ* during mining operations, recommendations herein made will ensure effective mitigation. As such there are no identified archaeological or cultural heritage barriers to the proposed mining project. We recommend that the Heritage Authorities approve the proposed development project to proceed as planned subject to implementation of SAHRA-approved intervention and mitigation measures.

11. REFERENCES

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